

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 15, 2006

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: M. J. Merritt, DNFSB Site Representative
SUBJECT: Lawrence Livermore National Laboratory (LLNL)
Report for Week Ending December 15, 2006

Hardened Engineering Test Building: LLNL recently provided the Livermore Site Office (LSO) notification of a positive unreviewed safety question (USQ) and an evaluation of safety related to a potential inadequacy of the safety analysis (PISA) for the Hardened Engineering Test Building, Building 334. The USQ and PISA identified a discrepant as-found condition in the facility related to permanently installed continuous air monitors (CAMs). The permanent CAMs are not present in the facility as required by the facility Documented Safety Analysis (DSA) dated October 16, 2006.

The Building 334 DSA requires two permanent CAMs be installed in specific locations in the facility, but the CAMs have been removed and portable CAMs are being used to support facility operations. The functioning of the CAMs is credited in the DSA as a defense-in-depth mitigative feature. The DSA requires CAMs to be operable in the Radiation Measurements (INRAD) Bay and Engineering Test Bay when special nuclear material is present. To meet this requirement, the facility has positioned portable CAMs near the work area. This approach has created an inconsistency between the actual physical locations of the portable CAMs and the locations specified for the permanent CAMs in the DSA. In its evaluation of safety, LLNL asserts that the practice of using the portable CAMs does not create worker safety concerns and satisfies the Radiation Protection Program requirements for providing immediate notification to the worker upon detection of radioactive airborne contamination. The portable CAMs are typically placed closer to the sources of contamination and breathing zones of the workers. LLNL has indicated that the Building 334 DSA will be revised to delete the reference to specific permanent locations for the CAMs.

Conduct of Operations: In September 2006, LLNL submitted a revision of its Nuclear Materials Technology Program (NMTP) conduct of operations implementation matrix to LSO. The revision was prepared to address LSO comments, primarily related to the relationship between the facility DSAs and the conduct of operations implementing documents. LSO recently approved the implementation matrix.

The conduct of operations implementation matrix is intended to flow-down the requirements of DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities to implementing documents*. The implementation matrix is only applicable to the NMTP facilities (i.e., Plutonium Facility, Tritium Facility, Hardened Engineering Test Building, and Radiography Facility). The matrix show the linkage between the order and the relevant sections of the *NMTP Conduct of Operations Manual* and the *LLNL Environment, Safety and Health Manual Document 3.5, Conduct of Operation for LLNL Facilities*. Significant challenges still remain in implementing conduct of operations in NMTP facilities. Among these challenges are setting the appropriate level of expectations for existing procedures, establishing a robust self-assessment process to ensure expectations are being met, and implementing a critique process that supports continuous improvement (see weekly report dated November 24, 2006).